

A Survey on Awareness, Attitude, and Perception toward Dental Malocclusion and Orthodontic Treatment among Undergraduate Dental Students

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Abstract

Background: Malocclusion is known to contribute overall health status and affecting psychosocial health of the individual. Hence as a dental student, it is important to have appropriate knowledge/awareness about dental malocclusion and orthodontic treatment. The aim of this study was to evaluate awareness, attitude, and perception toward dental malocclusion and orthodontic treatment among undergraduate dental students.

Materials and Methods: Descriptive, cross-sectional survey was conducted on 331 undergraduate dental students through a web-based questionnaire with 15 questions addressing various aspects of dental malocclusion and orthodontic treatment. The questionnaire includes for assessment of student knowledge, attitude, and perception toward malocclusion and orthodontic treatment. All the questionnaire was pre-designed and validated, self-administered, structured questionnaire was used for data collection. **Results:** A total of 331 undergraduate dental students participated in the present survey. Out of which 82% were females and 18% were males. About 85.5% of the participants were aware of the malalignment of teeth. About 58.9% of the respondents expressed willingness to undergo orthodontic treatment, even if the treatment duration is longer. About 53.8% of the survey participants were willing to continue the orthodontic treatment despite experiencing pain and ulcerations. **Conclusion:** The dental students had good knowledge about orthodontic treatment and had a positive attitude and perception toward it. Majority of undergraduate dental students had very good knowledge, satisfaction, and positive attitude regarding malalignment of teeth and orthodontic treatment.

Keywords: Awareness, Malocclusion, Orthodontics.

INTRODUCTION

Malocclusion is defined as the imperfect position of teeth when jaws are closed. Individuals with malocclusion usually have feeling of humiliation. It has a significant impact on the physical, social, and psychological well-being of a patient in the society.^[1] Various factors, such as oral habits, anomalies in the number, shape, size, and developmental position of teeth, can cause malocclusion, which can affect on periodontal health, dental caries, and temporomandibular joint problems. Therefore, it is necessary to know the reason and problems caused due to malocclusion.^[2,3] In the past three decades, a major reorientation of orthodontic treatment thinking has occurred among adult patients, the reasons may be due to changed lifestyles, patient awareness, social media, and multidisciplinary dental therapy that have allowed better management of the more complicated patient population,

thereby greatly improving the quality of care and treatment prognosis. There are many reasons why adult orthodontic therapy should be encouraged, including the improvement of function and occlusion, and improvement of aesthetics as well as the psychological aspects.^[4] A desire and need for orthodontic treatment have existed for many decades. The principal goal of orthodontic treatment is to improve oral health, function, and esthetic. This will help the overall well-

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being of an individual and to improve the patient's dental appearance.^[5,6] The knowledge about dental malocclusion is becoming increasingly important in orthodontics. In this background, the objectives of the present study are to assess awareness, attitude, and perception of orthodontic treatment among undergraduate dental students.

MATERIALS AND METHODS

Descriptive, cross-sectional survey was conducted on 331 undergraduate dental students through a web-based questionnaire with 15 questions addressing various aspects of dental malocclusion and orthodontic treatment. For the evaluation of awareness, attitude, and perception, a set of five questions for each was included in the study. The study was carried out using Google Forms. Google Forms an excellent tool for collecting online data, with or without knowing the identity of the participant, was used. The questionnaire included an assessment of dental students about awareness, attitude, and perception toward malocclusion and orthodontic treatment. All the questionnaires were pre-designed and validated, self-administered, structured questionnaire was used for data collection. The statistical analysis was done on a Google survey. The ethical clearance for the study was obtained from the Institutional Ethics Committee, MIDSR Dental College and Hospital, Latur (MIDSR-IEC-63-2021).

Statistical analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) software (IBM SPSS statistics for Windows version 23.0. IBM Armonk, NY, USA). Descriptive statistics were used to summarize the data. Chi-square test was performed to associate the assessment of awareness toward malocclusion and orthodontic treatment. The statistical significance was fixed at 0.05.

Inclusion criteria

The following criteria were included in the study:

1. Dental students
2. No history of orthodontic treatment
3. Willing to participate in the survey.

Exclusion criteria

The following criteria were excluded from the study:

Incomplete questionnaires were excluded from the study.

Data collection

The data for this study were collected through Google Forms and participants were requested to complete a structured questionnaire. The questions were prepared as follows: Five questions on awareness about malocclusion, five questions on students' attitude toward dental malocclusion, and five questions about their perception toward orthodontic treatment. The aim and objective of the study protocol were mentioned in the description and the Google Form link was sent to undergraduate dental students' mobile numbers. The study protocol was explained to the participants and

all the participants were requested to fill the questionnaire that had a total of fifteen questions. The research protocol is diagrammatically depicted in Figure 1.

RESULTS

The study participants were 331 dental students of MIDSR Dental College, Latur. The study group comprised 60 (18%) males and 271 (82%) females of I, II, III, and IV and interns of B.D.S. Students, aged between 18 and 22 years (Figure 2a and b).

Table 1 shows the awareness of undergraduate dental students about malocclusion and orthodontic treatment. Out of 331 students, 85.8% of students know the term malalignment/dental malocclusion/crooked teeth (Figure 3). Habits such as thumb sucking, tongue thrusting, and mouth breathing cause malocclusion or malalignment of teeth, about 78.6% of students were aware of it (Figure 4). About 23.3% of students said that they avoid smiling or covering their mouth because they feel unpleasant about the appearance of teeth (Figure 5). About 79.5% were fully aware that malaligned teeth causes' difficulty in chewing and maintenance of good oral hygiene (Figure 6). However, 96.7% are fully aware that well-aligned teeth improve a smile and increases the overall appearance and personality of an individual (Figure 7).

Table 2 shows the attitude of undergraduate dental students toward malocclusion of teeth and orthodontic treatment. Out of all the responses, 69.2% of students had an attitude that their teeth were well aligned and properly arranged (Figure 8). About 89.7% had a positive attitude that if an orthodontist or general dentist advised them for orthodontic treatment, they were willing to undergo orthodontic treatment (Figure 9). About 74.3% of students had a positive attitude to undergo extraction if required for correction of malocclusion (Figure 10). Out of all the respondents, only 44.7% had a positive attitude that orthodontic treatment can be done at any age (Figure 11). However, out of all the respondents, 27.2% said that they had teased people for their appearance of mal-aligned teeth (Figure 12).

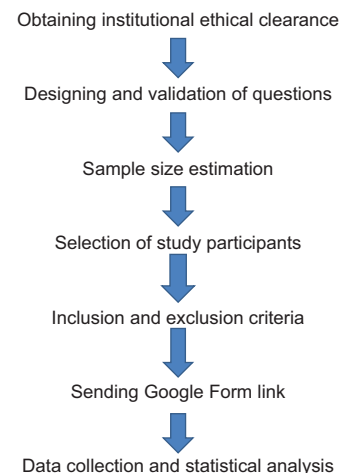


Figure 1: Research protocol flow chart

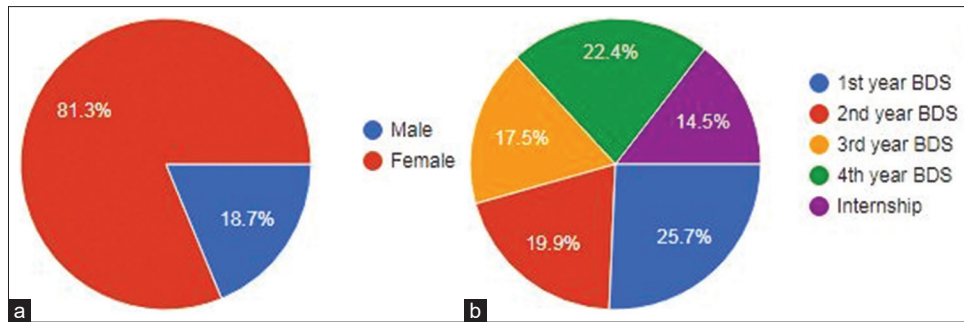


Figure 2: (a) Gender distribution (b) Academic year distribution

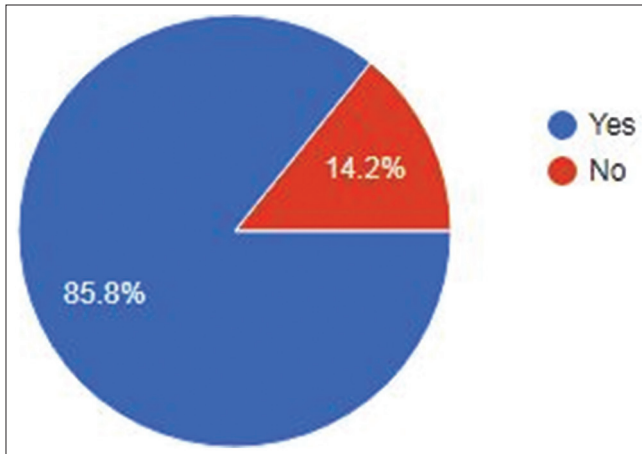


Figure 3: Count of "Do you know the term, malalignment/dental malocclusion/crooked teeth?"

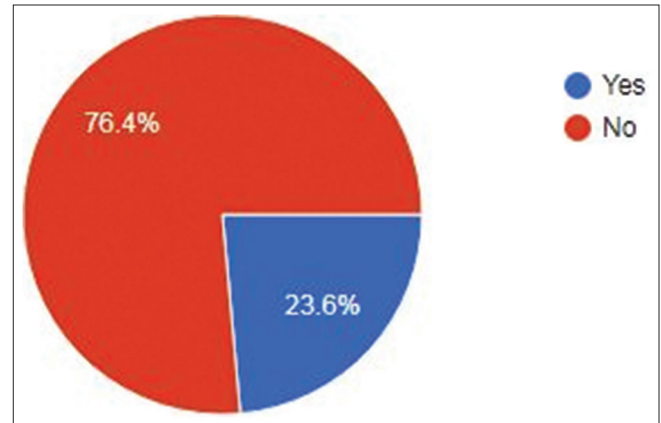


Figure 5: Count of "Do you try to avoid smiling/cover your mouth due to the appearance of your teeth?"

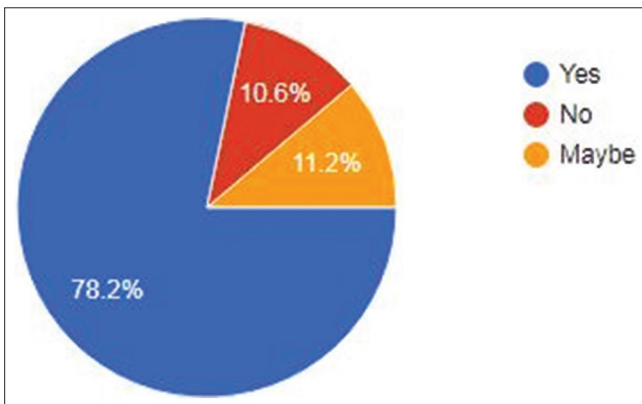


Figure 4: Count of "Do you know, habits like thumb sucking/tongue thrusting/mouth breathing can cause malalignment/malocclusion of teeth?"

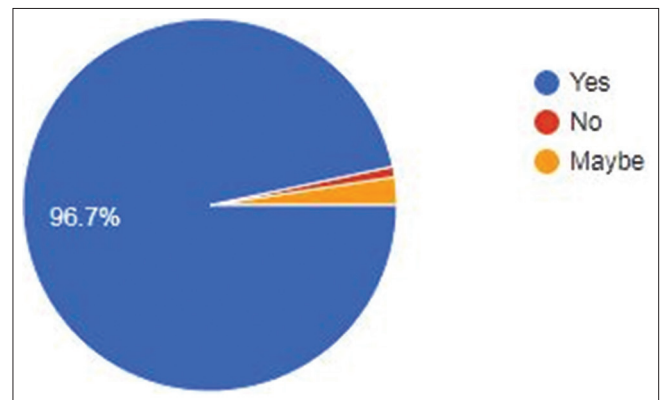


Figure 6: Count of "Do you think, well arranged teeth increases appearance, better smile and confidence?"

Table 3 shows the perception of undergraduate dental students on malocclusion and orthodontic treatment. Majority of dental students (58.9%) have motivated or convinced one or more of their relatives or friends to undergo orthodontic treatment (Figure 13). About 53.2% of students had a perception that wearing braces does not make a person look bad (Figure 14). About 78.9% of students believe that orthodontic treatment is expensive, and about 92.7% believe that orthodontic treatment takes a longer duration of time (Figures 15 and 16).

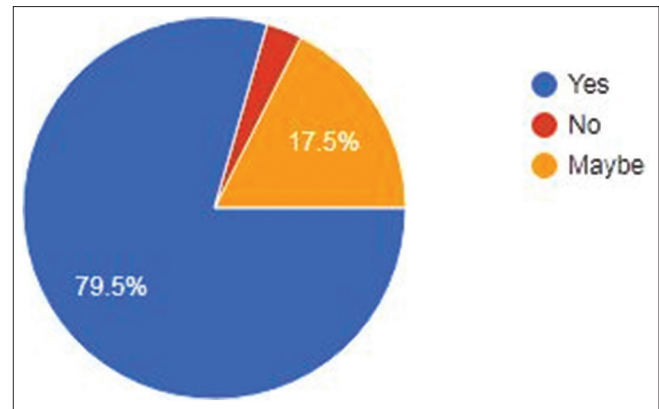
About 53.3% of students were willing to continue orthodontic treatment with slight pain or some discomfort during the treatment and 39.3% of students disagree with receiving orthodontic treatment with any discomfort (Figure 17).

DISCUSSION

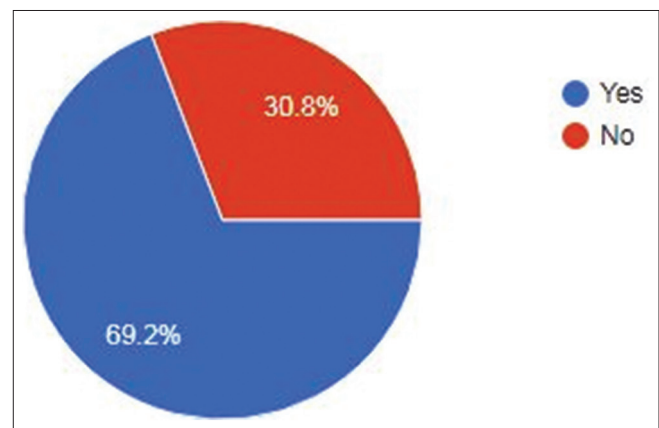
The motives for seeking orthodontic treatment are numerous and varied. A person's own desire for improving dental appearance is the main determinant factor, and the most commonly perceived impacts of dental esthetics included

Table 1: Awareness of dental malocclusion

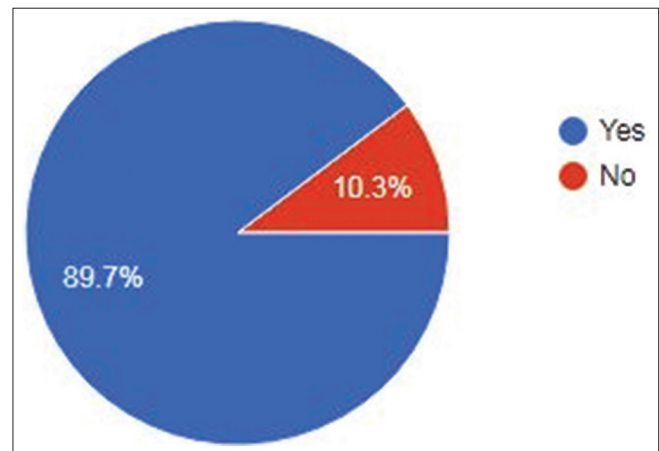
Q. No.	Survey questions	Response (%)
1	Do you know the term, malalignment/dental malocclusion/crooked teeth?	Yes-85.8 No-14.2
2	Do you know, habits such as thumb sucking/tongue thrusting/mouth breathing can cause malalignment/malocclusion of teeth?	Yes-78.6 No-10.6 Don't know-11.2
3	Do you try to avoid smiling/cover your mouth due to the appearance of your teeth?	Yes-23.3 No-76.7
4	Do you think mal-aligned teeth can affect chewing ability/oral hygiene?	Yes-79.5 No-3 Don't know-17.5
5	Do you think, well-arranged teeth increase the appearance, better smile, and confidence?	Yes-96.7 No-0.9 Don't know-2.4

**Figure 7:** Count of “Do you think mal-aligned teeth can effect chewing ability/oral hygiene?”**Table 2: Attitude toward orthodontic treatment**

Q. No.	Survey questions	Response (%)
1	Your teeth are well aligned/properly arranged?	Yes-69.2 No-30.8
2	Would you agree readily for taking orthodontic treatment if a dentist or orthodontist suggest for it?	Yes-89.7 No-10.3
3	If some teeth have to be removed in the course of your treatment of malalignment teeth, will you agree for the treatment?	Yes-74.3 No-25.7
4	What do you think, orthodontic treatment can be taken any age?	Yes-44.7 No-55.3
5	Have you ever commented/teased on the appearance of your teeth?	Yes-27.2 No-72.8

**Figure 8:** Count of “your teeth are well aligned/properly arranged?”**Table 3: Perception toward orthodontic treatment**

Q. No.	Survey questions	Response (%)
1	Have you convinced/motivated by your relatives/friends to take orthodontic treatment?	Yes-58.9 No-41.1
2	Do you think “wearing braces do not look good”?	Yes-46.8 No-53.2
3	Do you think, Orthodontic treatment is expensive?	Yes-78.2 No-21.8
4	What do you think, Orthodontic treatment takes longer duration?	Yes-92.7 No-7.3
5	If you experience slight pain or some discomfort during the treatment for malalignment, will you still continue with the treatment?	Yes-53.8 No-6.9 May be-39.3

**Figure 9:** Count of “Would you agree readily for taking orthodontic treatment if a dentist or orthodontist suggested for it?”

appearance, self-consciousness about their smile, self-confidence, self-esteem, and so on. The present research is the first to study the association between the psychosocial impact of dental aesthetics and the desire for orthodontic treatment among young adults and it was more advisable to analyze the psychosocial factors in adults, who have a more stable self-concept compared with adolescents.^[1] The decision-making process that a person undertakes when judging his/her own dental esthetic satisfaction may be broken down into several

steps. First, knowing about the awareness of dentition, second, their perception, and finally, their attitude toward orthodontic treatment. We may postulate that females had very good knowledge about dental esthetics compared to the males.^[2]

The importance of patients' perceptions regarding orthodontic treatment cannot be underestimated as it is the patients

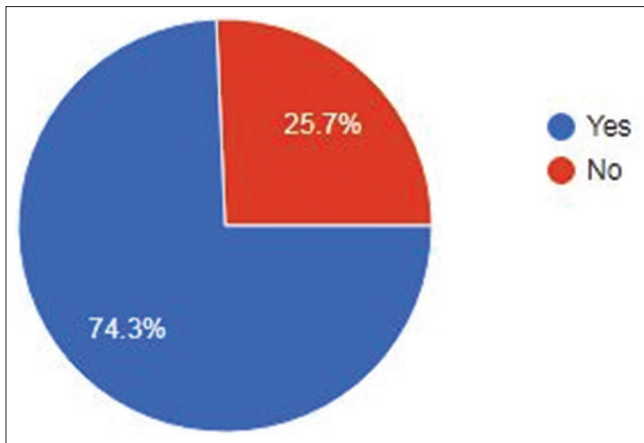


Figure 10: Count of "If some teeth have to be removed in the course of your treatment of malalignment teeth, will you agree for the treatment?"

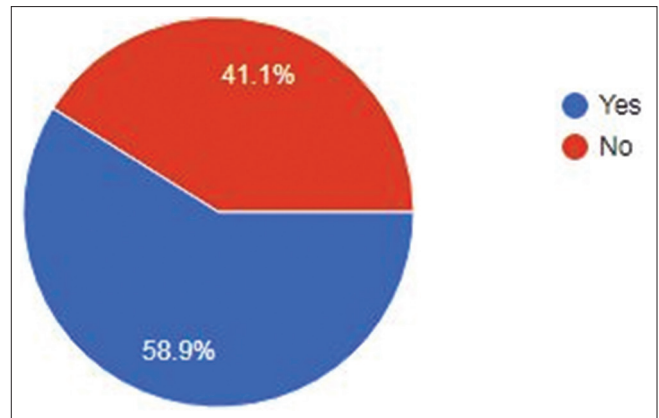


Figure 13: Count of "have you convinced/motivated your relatives/friends to take orthodontic treatment?"

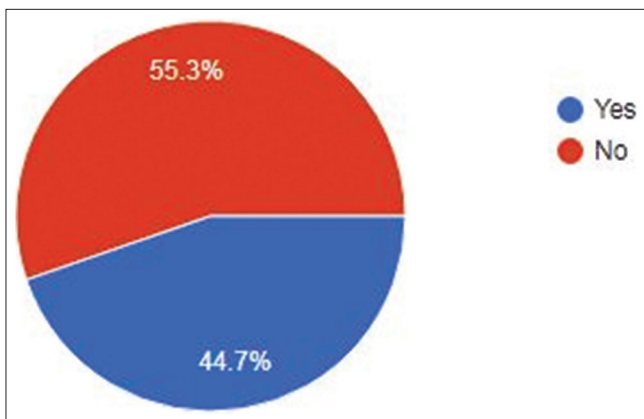


Figure 11: Count of "what do you think, orthodontic treatment can be taken at any age?"

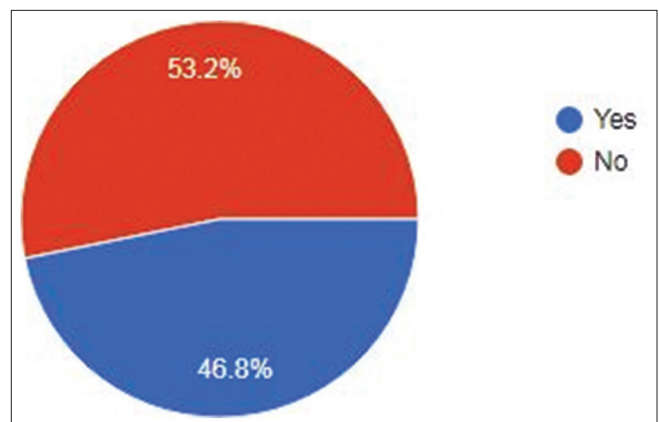


Figure 14: count of "Do you think "wearing braces does not look good?"

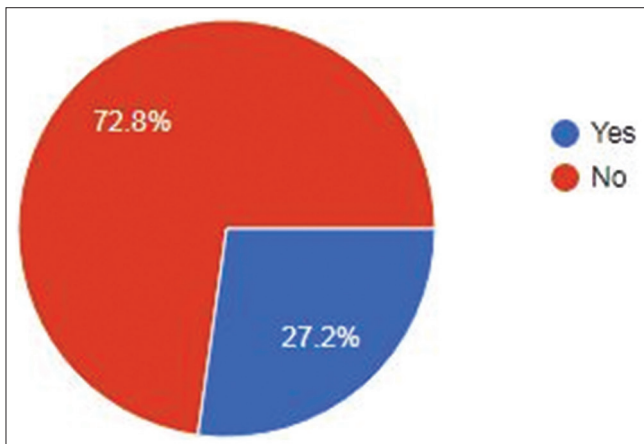


Figure12: Count of "have you ever commented/teased on the appearance of your teeth?"

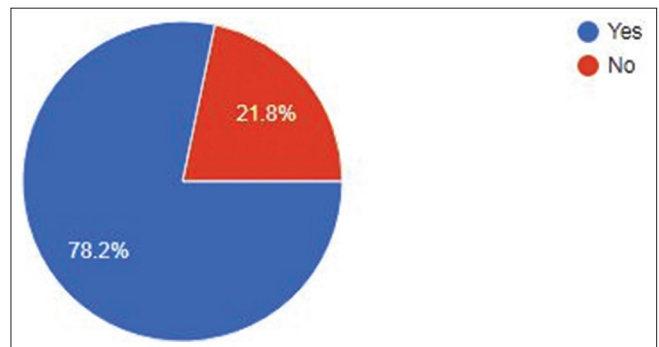


Figure 15: Count of "do you think, orthodontic treatment is expensive?"

who receive treatment and need to gain satisfaction from improved esthetics and function.^[7] It had been hypothesized that increased experience with and availability of orthodontic service should be translated into differences in esthetics rating and perception of treatment needs.^[8] Similar results have

been obtained in our present study where 85.5% of the dental students who had knowledge about orthodontic treatment were aware of dental esthetics. It had been hypothesized that increased experience with and availability of orthodontic service should be translated into differences in esthetics rating and perception of treatment needs. 69.2% of the students had a positive attitude toward dental malocclusion. Regarding self-satisfaction about their teeth, the study indicates that the subjects did make fairly accurate self evaluation of their own malocclusions (crooked teeth). The unsatisfied subjects with

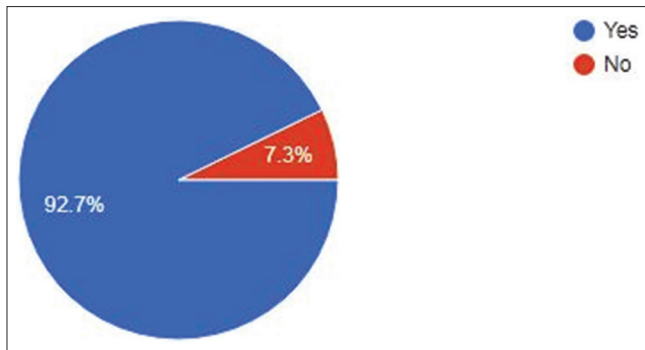


Figure 16: Count of “do you think orthodontic treatment takes longer duration?”

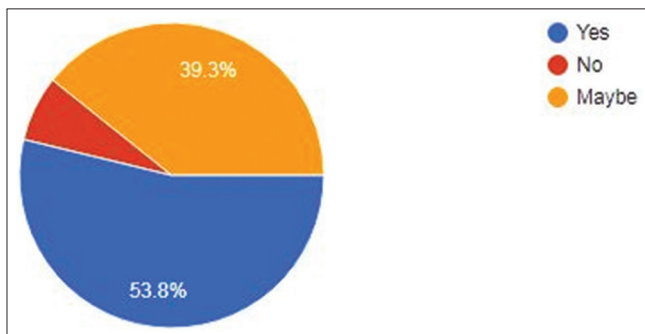


Figure 17: Count of “if you experience slight pain or some discomfort during orthodontic treatment, will you still continue with the treatment?”

their dental esthetics had a positive attitude toward orthodontic treatment. The satisfied subjects with their dental esthetics were aware of the attractiveness of their teeth. 58% of students have motivated friends and relatives to undergo orthodontic treatment. Seeking dental aesthetics treatment and appreciating one's smile indicated a greater influence of dental appearance on people's lives. When undergoing an aesthetic procedure and a troublesome feature is modified or eliminated, the patient perception of the feature also changes, and his or her expectation is fulfilled by the treatment.^[3]

78% of student were aware that malalignment of teeth can affect oral function so for improving oral hygiene, smile, and

to correct dental irregularities they visited orthodontist. About 44.7% of respondents advised orthodontic treatment should be carried out during any age.

CONCLUSION

A questionnaire study evaluated the awareness about teeth, level of self-satisfaction, attitude toward orthodontic treatment, and the overall perception of dental appearance among a group of dental students. From the study, it was found that the subjects had:

- Good knowledge about orthodontic treatment and positive attitude toward orthodontic treatment
- Females had very good knowledge, satisfaction, and positive attitude compared to the males regarding dental esthetics and treatment
- Students from the final year and interns were much more aware, very much satisfied, and had a more positive attitude than 1st year students.

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